

Application Number 10/784,109  
Response to Office Action mailed January 31, 2008

### **REMARKS**

This amendment is responsive to the Final Office Action dated January 31, 2008. Applicant has amended claims 1, 4-7, 17, and 20, and canceled claims 3 and 19. Upon entry of this amendment, claims 1, 2, 4-18, and 20-26 will be pending.

As a preliminary matter, Applicant had previously added new claim 26 by the Amendment dated November 14, 2007. The Final Office Action failed to address new claim 26. Applicant respectfully requests the Examiner to withdraw the Office Action and consider claim 26 in the Examiner's next communication.

### **Allowable Subject Matter**

In the Office Action, the Examiner objected to claim 16 as including subject matter allowable over the prior art. Applicant appreciates this indication by the Examiner but has elected not to rewrite claim 16 in independent form at this time.

### **Claim Rejection Under 35 U.S.C. § 103**

In the Final Office Action, the Examiner rejected claims 1, 3-6, 9-12, 14-15, 17, 19, 22-23 and 25 under 35 U.S.C. 103(a) as being unpatentable over Moore (US 6,714,121) in view of Kunz (US 6,127,989) and See (US 6,285,327). Applicant respectfully traverses the rejection to the extent such rejections may be considered applicable to the claims as amended. The applied references fail to disclose or suggest the inventions defined by Applicant's claims, and provide no teaching that would have suggested the desirability of modification to arrive at the claimed invention.

Applicant has amended independent claims 1 and 17 to include the limitations already present within dependent claims 3 and 19, respectively. For example, claim 1 as amended recites an antenna that forms an electromagnetic field that defines a communication zone in which RFID tags can be read, wherein the antenna has a substantially planar form, and a substantially-contiguous conductive shield positioned a distance from the antenna within a plane parallel to the antenna to define an outermost region of the communication zone within the plane parallel to the antenna. Claim 1 further requires that the conductive shield has a width that extends in the plane parallel to the antenna such that the electromagnetic field at any region beyond the conductive

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shield is below a threshold level for communication with the RFID tags, and the conductive shield comprises planar conductive regions oriented to form a non-shielded inner region. Claim 1 further requires that the antenna is disposed within the non-shielded inner region and parallel to the planar conductive regions. Claim 17 requires similar limitations.

In the Final Office Action, the Examiner cited Moore as teaching an RFID system having a planar antenna that forms an electromagnetic field for communication with RFID tags. The Examiner acknowledged that Moore fails to teach or suggest a substantially-contiguous conductive shield positioned a distance from the antenna within a plane parallel to the antenna to define an outermost region of the communication zone within the plane parallel to the antenna, but cited Kunz as teaching such a conductive shield. In particular, the Examiner stated that the protective ring 20 of Kunz is a conductive shield that defines an outermost region of a communication zone within the plane parallel to the antenna.<sup>1</sup> This is plainly a mischaracterization of the Kunz reference.

Kunz describes an antenna coil structure within a transponder (i.e., an RFID tag) having a peripheral metal ring for the purpose of protecting the antenna within the RFID tag. In particular, Kunz states that protective ring 20 is provided "to protect elements of said integrated circuit against mechanical stress or corrosion."<sup>2</sup> The Examiner appears to understand this as the purpose of the Kunz protective ring, as the Final Office Action cited this as a motivation for combining the features of Moore and Kunz.<sup>3</sup> In contrast to the Examiner's characterization, Kunz does not refer to protective ring 20 as a conductive shield, nor does Kunz state that any shielding effects are even achieved by protective ring 20. Moreover, protective ring 20 of Kunz does not define an outermost region of the communication zone formed by an electromagnetic field of the antenna, as required by Applicant's claims.

Quite the opposite, Kunz specifically teaches that that "the antenna coil is insensitive to the presence of the protective ring,"<sup>4</sup> so protective ring 20 does not have an effect on the field associated with the antenna. Therefore, contrary to the Examiner's assertion, there is no

<sup>1</sup> Final Office Action dated January 31, 2008, at page 3.

<sup>2</sup> Kunz, col. 1, ll. 49-51.

<sup>3</sup> The Examiner asserted that it would have been obvious to one of ordinary skill in the art to use the 'conductive shield' of Kunz for the purpose of protecting the antenna device [of Moore] against mechanical stress or corrosion. Final Office Action dated January 31, 2008, at page 3.

<sup>4</sup> Kunz, col. 1, ll. 54-55.

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evidence in the record to suggest that protective ring 20 defines an outermost region of the communication zone *formed by an electromagnetic field of the antenna*.

Referring in the Final Office Action to original claim 3, the Examiner further stated that Kunz teaches that the conductive shield comprises planar conductive regions oriented to form a non-shielded inner region, and further wherein the antenna is disposed within the non-shielded inner region and parallel to the planar conductive regions, as required by amended claim 1. However, as explained above, there is no evidence to suggest that Kunz teaches a conductive shield let alone planar conductive regions oriented to form a non-shielded inner region, wherein the antenna is disposed within the non-shielded inner region and parallel to the planar conductive regions.

The Examiner also recognized that Moore and Kunz fail to teach or suggest a conductive shield having a width that extends in the plane parallel to the antenna such that the electromagnetic field at any region beyond the conductive shield is below a threshold level for communication with the RFID tags, as further recited by claim 1. The Examiner cited the See reference at col. 12, ln. 48–col. 13, ln. 4 as teaching this feature. On this basis, the Examiner asserted that it would have been obvious to modify the Moore antenna to include the internal shielding of the cell phone described by See “in order to decrease the interaction of an internal antenna with other elements or conductors in the wireless device.”

The See reference fails to teach or suggest a conductive shield having a width that extends in the plane parallel to the antenna such that the electromagnetic field at any region beyond the conductive shield is below a threshold level for communication with the RFID tags. The passage of See cited by the Examiner describes an electrically conductive shielding material adjacent to a portion of a substrate antenna within a cell phone. As described by See, this “creates a ‘shielded’ substrate antenna which may have improved radiation characteristics by establishing a zero current near field arrangement with energy being directed into the far field pattern of the antenna.”<sup>5</sup> Thus, See specifically describes electrically shielding the near field in order to improve the far field that extends well beyond the shielding. To be clear, in contrast to the position of the Examiner, See utilizes a conductive shield to improve the characteristics of the electromagnetic field that extends beyond the shielding.

<sup>5</sup> See, col. 12, ll. 53–57 (emphasis added).

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This is entirely the opposite of what claim 1 requires. Specifically, claim 1 recites a conductive shield that defines an outermost region of a communication zone defined by an electromagnetic field formed by the antenna, wherein the conductive shield has a width such that the electromagnetic field at any region beyond the conductive shield is below a threshold level for communication with the RFID tags. Contrary to the Examiner's assertion, See provides no teaching of a conductive shield that reduces the electromagnetic field beyond the conductive shield. To be clear, the fact that the See conductive shielding establishes a near field arrangement having zero electrical current is not pertinent to Applicant's claimed feature of causing the electromagnetic field at any region beyond the conductive shield to be below a threshold level for communication with the RFID tags, as these features are quite different in structure and operation.

Thus, even if one of ordinary skill in the art were to modify the antenna of in view of the teachings of Kunz and See, this would not result in Applicant's invention as claimed. Consequently, amended independent claims 1 and 17 are patentable over Moore in view of Kunz and See.

Of course, the claims dependent on independent claims 1 and 17, i.e., claims 2, 4-16, 18, 20-26, incorporate all of the limitations of the respective base claims, and therefore are patentable for at least the reasons expressed above.

In the Final Office Action, the Examiner rejected claims 2, 7-8, 13, 18, 20-21 and 24 under 35 U.S.C. 103(a) as being unpatentable over Moore in view of Kunz and See and further in view of Krebs (US 2004/0224135). As explained in Applicant's previous responses, Krebs describes a large shield applied to an entire shelf. For example, Krebs provides no teaching or suggestion that the shield is positioned a distance from the antenna within a plane parallel to the antenna. Moreover, even if the antenna of Moore were modified to include the Krebs shielding, such a modification would still fail to achieve Applicant's claimed invention for at least the reasons set forth above.

For at least these reasons, the Examiner has failed to establish a prima facie case for non-patentability of Applicant's claims 1-26 under 35 U.S.C. 103(a). Withdrawal of this rejection is requested.

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### CONCLUSION


All claims in this application are in condition for allowance. Applicant respectfully requests reconsideration and prompt allowance of all pending claims. Please charge any additional fees or credit any overpayment to deposit account number 50-1778. The Examiner is invited to telephone the below-signed attorney to discuss this application.

Date:

By:

March 25, 2008

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